

REMARKS

Claim 1 has been amended to correct a minor grammatical issue and therefore does not raise any new issues. Claims 1, 2, 11-16, and 28-31 are pending and under consideration. Claim 1 is the independent claim. No new matter is presented in this Amendment.

REJECTIONS UNDER 35 U.S.C. §112:

Claim 1 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Applicants respectfully traverse this rejection for at least the following reason.

Claim 1 is fully supported by the specification and the drawings, and in particular FIGs. 2A and 2B clearly illustrate the features of independent claim 1. Furthermore, such features are clearly described in the specification, at least, at paragraphs [0025] - [0029].

Accordingly, Applicants respectfully assert that all the features recited in independent claim 1, are fully described in the specification and thus request that the rejection of independent claim 1 be withdrawn.

REJECTIONS UNDER 35 U.S.C. §102/103:

Claims 1, 2, 11-12 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Tominaga et al. (U.S. Patent No. 5,252,370).

Regarding the rejection of independent claim 1, it is noted that claim 1 recites a multi-layer structure comprising: a substrate; a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam spot expands when a temperature of the portion exceeds a predetermined temperature; and a pit pattern formed on an outermost surface of the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

The Office Action states that although Tominaga does not show an outermost layer having a pit pattern, this does not imply that the outermost layer is a flat layer, since the figures in Tominaga are not drawn to scale. The Office Action also states that since claim 1 uses open-

ended language (a multi-layer structure comprising), there may be additional layers formed over the pit pattern that would make the structure of claim 1 similar to Tominaga. Applicants respectfully traverse these characterizations of Tominaga for at least the following reasons.

Initially, it is noted that Tominaga teaches directing a recording laser light onto an optical recording medium 1, from the back surface of the substrate 2, in order to heat the recording thin film 3. The inorganic compound in the recording thin film 3 is heated and thus decomposed generating a gas. The pressure of the evolving gas causes a space 31 to be created within the recording film 3. In unison with a temperature rise in recording thin film 3, the temperature of substrate 2 in proximity to recording thin film 3 is also increased so that substrate 2 becomes softened. This allows the pressure of the evolving gas to dig a recess 21 in the substrate 2 surface. As the case may be, dielectric thin film 4 can also be depressed by the gas pressure (column 6, lines 40-58). Accordingly, Tominaga discloses heating the recording film 3 so as to allow the pressure of the evolving gas to dig a recess 21 in the surface of the substrate or in the dielectric thin film. In other words, only the surfaces of the layers that are in direct contact with the recording film 3 are affected by the evolving gas.

Tominaga makes no reference or suggestion of an outermost surface of the layer being affected by the evolving gas. Accordingly, even if the figures in Tominaga are not to scale, as noted by the Examiner, there is no teaching or suggestion in Tominaga of a pit pattern being formed on an outermost surface of the multi-layered structure, as recited in independent claim 11.

Furthermore, regarding the Examiner's statement that claim 1 uses open-ended language (a multi-layer structure comprising), and therefore additional layers maybe formed over the pit pattern that would make the structure of claim 1 similar to Tominaga, Applicants respectfully request that the Examiner clarify her position, since it is not clear what relationship exists between forming additional layers on the structure recited in claim 1 and the structure taught by Tominaga. However, if the Examiner intends to state that additional layers can be formed over the outermost layer of the multi-layer structure, thus forming another outermost layer having a pit pattern, than it appears the Examiner does not give any patentable weight to the meaning of "an outermost layer."

Applicants note that as a general proposition, in order to find that a reference anticipates a claim, the reference must disclose each element of the claim. In interpreting the reference, the Examiner is to broadly interpret the claim, but must do so within the bounds of reason. In re Morris, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997), MPEP 2111. Thus, while the Examiner is to

avoid reading limitations from the specification into the claims, the Examiner should not interpret claim limitations so broadly as to contradict or otherwise render a limitation meaningless as would be understood by those of ordinary skill in the art. See, In re Cortright, 49 USPQ2d 1464, 1467 (Fed. Cir. 1999), In re Zletz, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), MPEP 2111.01.

In this case it appears the Examiner is so broadly interpreting the claim limitation of an "outermost surface of the multi-layer structure," that it renders this limitation meaningless as would be understood by those of ordinary skill in the art.

Accordingly, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. § 102(b) and/or 103(a) should be withdrawn because Tominaga fails to teach or suggest each feature of independent claim 1.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 2, 11 and 12 under 35 U.S.C. § 102(b) and/or 103(a) should be withdrawn at least because of their dependency from claim 1 and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 2, 11 and 12 also distinguish over the prior art.

REJECTIONS UNDER 35 U.S.C. §102:

Claims 1-2, 11-14, 16, 28-29 and 31 are rejected under 35 U.S.C. §102(b) as being anticipated by Shiratori et al. (U.S. Patent No. 5,648,134).

Regarding the rejection of independent claim 1, it is noted that claim 1 recites a multi-layer structure comprising: a substrate; a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam spot expands when a temperature of the portion exceeds a predetermined temperature; and a pit pattern formed on an outermost surface of the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

The Office Action relies on Shiratori for the teachings of independent claim 1 and in particular states that the recording medium taught by Shiratori is irradiated by a DC laser to form band-like portions (or pit pattern) between the grooves of the surface and in particular cites Examples 2 and 3.

Applicants note that although Shiratori does teach forming band-like portions on the surface of one of the layers, the band-like portions are formed on the magnetic recording layer 3,

which as illustrated in FIG. 3 is not on the outermost surface of the multilayer structure (column 3, lines 41-48). Rather, the magnetic recording layer 3 is located between two dielectric layers. Furthermore, Applicants note that the pit pattern does not have a diameter smaller than a diameter of the laser beam spot, as recited in the independent claim, but rather has a diameter equal to that of the laser beam (column 5, lines 3-16) used to form the band.

Accordingly, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Shiratori fails to teach or suggest each feature of independent claim 1.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 2, 11-14, 16, 28-29 and 31 under 35 U.S.C. §102(b) should be withdrawn at least because of their dependency from claim 1 and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 2, 11-14, 16, 28-29 and 31 also distinguish over the prior art.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 13, 16, 28-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,252,370 to Tominaga et al. in view of U.S. Patent 4,504,548 to Esho et al.

Regarding the rejection of claims 13, 16 and 28-31, it is noted that these claims depend from independent claim 1. As noted above, Tominaga fails to teach or suggest the novel feature of independent claim 1.

Esho on the other hand is relied upon for a teaching of features other than those recited in the independent claim. Accordingly, Esho fails to cure the deficiencies of Tominaga and thus fails to teach or suggest the features recited in independent claim 1 from which claims 13, 16 and 28-31 depend.

Therefore, Applicants respectfully assert that the rejection of claims 13, 16 and 28-31 under 35 U.S.C. §103(a) should be withdrawn because neither Tominaga nor Esho, whether taken singly or combined, teach or suggest each feature of independent claim 1 from which claims 13, 16 and 28-31 depend.

ALLOWABLE SUBJECT MATTER:

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if incorporated into the base claim.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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